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ABSTRACT

The study examined attitude change among 27 nonhandicapped high school students toward 9 severely handicapped autistic peers following two types of direct contact programs, one of a tutorial nature and one of a noninstructional, friendship nature. Ss were randomly placed in one of three experimental groups: tutorial, friendship, or no-contact control. Pre- and posttests on an attitude survey, a 5 minute behavior probe measuring duration and type of interactions, and interviews with each participant were conducted. Findings revealed that contact resulted in a significant increase in amount and type of interaction with handicapped peers during noninstructional periods. Slight differences were found in willingness to interact as indicated by behavioral observations between special friends and peer tutors, but the differences were not significant. Overall, both the peer tutor and special friends program were successful, as evidenced from interview and observation data, in promoting more positive interactions. (CL)

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The Effects of Peer Tutoring and Special Friend Experiences on Nonhandicapped Adolescents*

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Running Head: Peer Tutoring and Special Friends

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The success of integration is to be determined by the educational and social effects on both the handicapped students and their nonhandicapped peers. Few would disagree that the benefits to many handicapped students have been positive and productive in terms of improving quality of life and normalization of these individuals. However, the benefit to the nonhandicapped students has been of controversy due to conflicting research results. One commonly used means of evaluating the effect of integration on nonhandicapped students has been to assess their attitudes toward their peers. Gottlieb & Budoff, 1973; Gottlieb, Cohen & Goldstein, 1974; and Gottlieb & Davis, 1973; each found more positive attitudes toward disabled persons in settings where handicapped students were not integrated. Behaviors reflecting pity, fear, disgust and rejection toward peers have been observed in integrated settings (Jones, 1972; Burton & Hirshoren, 1979). And, according to some, negative attitudes may worsen as both populations mature (Ayer, 1970; Kang & Masoodi, 1977; Larsen, 1975; Panda & Bartel, 1972; Rapier, Adelson, Carey & Croke, 1972).

A commonality of this research is that little or no systematic intervention was implemented to educate the nonhandicapped students in order to alleviate fears toward and misconceptions about the abilities of disabled persons. Voeltz (1980) contends that modification of one's attitude and resultant behaviors is possible through systematic educational intervention. She states that

> Even is researchers were to document that handicapped children exhibit an intolerance for their handicapped peers that includes a willingness to engage in overtly

> cruel behavior, this should posit a challenge to educators rather than a limitation. Surely such behavior of presumable "normal" children is as susceptible to change as the behavior of severely handicapped children, now apparently acquiring skills once thought unattainable. (Page 463)

Many researchers now agree that the critical component in producing successful integration is not merely bringing the two populations together and then standing back expecting to see magical friendships grow, but is the development of systematic techniques to guide interactions and produce healthy, educated opinions about persons who deviate from the norm (Bricker, 1978, Donaldson, 1980; Fredericks, Baldwin, Grove, Moore, Riggs & Lyons, 1978; McHale & Simeonsson, 1980; Salend & Moe, 1982; Stainback & Stainback, 1980; Stainback, Stainback, Raschke & Anderson, 1981; Voeltz, 1980, 1982).

Approaches used to contend with negative attitudes and discriminatory behaviors can be categorized in the following areas: (1) the use of slides, films and lectures (2) education through literature (3) disability simulation and (4) structured direct contact with handicapped peers. The use of the first two approaches alone have had very limited success in improving attitudes. Programs which are persuasive and merely factual in nature have at best resulted in no change in attitude (Forader, 1970; Seltzer, 1977; Wyrick, 1976). Salend & Moe, 1982, investigated the effects of children's books about handicapping conditions on the attitudes of nonhandicapped students both alone and in combination with simulation activities. They found no

significant differences in attitude using the books alone, but did find some differences in the book + activities condition. These findings were supported in a similar study by Leung (1980). The third strategy has found some limited success in improving attitudes. Simulation activities can be successful if they are done in such a way that allows the role player to observe the reactions of nondisabled persons (Clore & Jeffrey, 1972; Donaldson, 1980.). If reactions of others are not inherent in the program typically, little change will be seen. (Wilson & Alcorn, 1969).

The fourth strategy has again resulted in contradictory results. McHale and Simeonsson (1980) used 6 second and third graders to teach same aged autistic children how to play during a 30-min leisure period in the special education classroom. They found no significant change in attitude from the beginning of the intervention to the end, but did indicate an increase in understanding of autism. Voeltz (1980, 1982) introduced a "special friends" program to structure interactions between cross-age nonhandicapped and severely handicapped peers during recess and social events. She found significant increases in positive attitudes for this high-contact group and no significant change across a no-contact group. She explains the discrepancy between the two investigations. While McHale and Simeonsson presented the purpose of the play interactions in terms of teaching the autistic students to play, Voeltz encouraged interaction on a more friendship, noninstructional basis. Voeltz (1982) contends that tutorially-oriented programs may not be a positive alternative to helping relationships which may foster

negative attitudes. Donaldson (1980) supports the notion that contact with handicapped individuals is only successful in terms of modifying attitudes if there is at least equal status between the two individuals. Equal status relationships are defined as either same age, or equal social, educational, or vocational status. Nonequal status occurs when the disabled person is significantly younger than the nondisabled person or is in a position of receiving help or assistance. Donaldson reports that positive attitudinal shifts were seen in seven out of eight studies of contact where equal status interactions were present (Anthony, 1969; Donaldson & Martinson, 1977; Evans, 1976; Langer, Fiske, Taylor & Chanowitz, 1976; Marsh & Friedman, 1972; Rapier, et al, 1972; Sedlick & Penta, 1975).

The initial purpose of the present investigation was to examine attitude change among high school students toward severely handicapped autistic peers following two types of direct contact prgrams, one of a tutorial nature and one of a noninstructional, "friendship" nature. A third group consisting of no-contact volunteers was used to replicate the findings that structured direct contact with severely handicapped peers will result in greater attitude change than will no contact.

While much emphasis has been placed on examining and modifying attitudes of nonhandicapped students toward their handicapped peers, research is severely lacking in examination of resultant generalized behavior change following intervention. Unfortunately, attitudes and behavior do not necessarily correlate. Responses on attitude scales can be confounded by assumed pressures to say what's right, misreading or

misunderstanding of items, and uncontrolled environmental conditions. McHale et al conducted behavioral observations assessing the frequency of play, communication, solitary play, and interaction with the autistic children. They found some relationship pretest between social desirability to interact and conceptions of autism based on the attitude scale, and the children's solitary play and communication with autistic peers. There was no relationship between the scale measures and behaviors posttest.

The second purpose of the investigation was to assess behavior change following intervention. A series of 5 min behavior probes and a confidential interview were implemented pre and posttest.

Method

Participants

During the 1982-83 academic school year 27 nonhandicapped high school students from the 9th to the 12th grades participated in the study. The participants prior to the beginning of the investigation had had no extensive experience interacting with handicapped individuals. None had immediate family members with handicapping conditions and none had prior involvement with classrooms for the handicapped. All participants showed active interest in participating in the present study as a result of one of the following recruitment procedures. Informal discussions describing the types of interactions and activities to occur in the special education classroom were held in a psychology, English and history class at the beginning of each semester. Counselors were requested to mention the program to all students with

available time slots. Notices describing the program were posted in all areas of the school. And former teacher assistants were asked to inform their friends of the program. The high school students were told that participation in the program would entail, in addition to working a specified number of hours, completng a short survey and answering a few confidential questions. The participants were blind as to the nature of the research questions.

The special education classroom consisted of 9 students ages 17-21 with severe handicapping conditions including autism, severe mental retardation and severe visual and hearing impairment. All of the students displayed self-stimulatory and aggressive behaviors.

Setting

All attitude measurements were conducted in the classroom and in an office adjacent to the classroom. Behavior probes were taken in a 3m x 4m leisure area with the confederate sitting alone on a couch, the participant sitting at a round table 2m from the couch and a data collector positioned at a table 7m to the diagonal of the leisure area.

All handicapped-nonhandicapped interactions occurred in the classroom, in a courtyard outside of the classroom, at various sports areas of the school and in a shopping area one block southwest of campus.

Procedures

A pretest-posttest experimental design was employed. Following a stated intent to participate each student was randomly placed in one of three experimental groups. The first contact

group consisted of teacher assistants who were required to come to the special education classroom for one 50 minute class period each day. At the beginning of each period the participant was instructed by the classroom teacher to work with 2-3 autistic students in a formal structured activity which required giving systematic cues, prompts and consequences, and recording data. Each new activity was modeled by the teacher prior to the teacher assistant giving instruction. Instruction in calculator, shopping, cooking, money exchange, reading, vocational and language skills were those activities sampled.

A second contact group was described as an independent study group. The participants were required to spend four hours each week interacting in some direct way with the students from the severely handicapped classroom. The assignment of hours was flexible and arranged with the classroom teacher at the beginning of each week. Each participant was allowed to use the time before and after school, school breaks and any free class period to fulfill his/her time requirement. Prior to the beginning of the program each independent study participant was to observe the students in the classroom for 1-2 hours. Other than a posted list of suggested activities and students already trained to participate in those activities, no instructions were given to the participants upon entry into the classroom. All questions concerning particular student behavior, language modes, or abilities were answered directly by the classroom teacher and suggestions as to how to most effectively respond in the presence of aberrant behavior were given. The suggested activities were all of a leisure-recreational type including playing frizbee,

football, tennis, or basketball; playing Uno, Fish or checkers; going to the pizza parlor to play videogames, to an ice cream parlor or to a local restaurant; and taking a walk or just "hanging out" around school.

The third experimental group was a no contact control group. The two contact groups each received 5 units of high school credit for participation in the program. There were an equal number of participants in each experimental group.

Measurement

Three objective measurements of attitude were given to each ofthe 27 participants prior to the start of the program and at the completion of a semester (15 weeks). A survey was administered consisting of 61 questions. The questions reflected four variables affecting one's overall attitude toward handicapped individuals. Knowledge of handicapping conditions, amount of contact with persons with handicapping conditions, affect toward and social willingness to interact with handicapped individuals were the four variables assessed in the survey. The variables were determined in an initial factor analysis of the survey done the previous year using the results of completed forms by 300 high school seniors. Handicapped was defined to the participants as "any handicap including mental retardation, deafness, blindness, physically crippled and emotionally disturbed." The format of the survey required making 3 pt. choices (yes, no or unsure; hardly ever, once in a while, or a lot; and never, hardly ever, or once in a while). The survey was developed by a committee of persons from San Francisco State University employed by the Socialization Research Project.

A second measurement used was a 5 minute behavior probe which measured the duration and type of interactions initiated by the participant toward each of three confederates. A time sampling procedure of 15 sec observe, 5 sec record was used to assess the participant's behavior when left alone in a setting with one of the confederates. Three probes were conducted with each member of the three experimental groups prior to involvement in the program and at the close of one semester. The three confederates probes of participant behavior were done with Monte, a familiar autistic individual who was a student in the special education classroom; Jorge, a nonfamiliar, autistic individual who was a student from a classroom on another campus; and Bob, a nonfamiliar nonhandicapped student from San Francisco State University. Monte and Jorge were selected to act as confederates based on their similarity in responding to initiations by others, their inability or unwillingness to initiate interactions with others, and their relative absence of inappropriate aberrant or unpredictable behavior. Bob, the nonhandicapped confederate was instructed to behave similarly; he was to respond appropriately to questions and statements, but he was not to initiate interactions with the participants.

A third measure of attitude and attitude change was a 15-20 min candid interview with each participant focusing on recent and distant contact with handicapped individuals, self affect and assumed affect of others toward handicapped persons, willingness to be similar to and different from his handicapped and nonhandicapped friends, and evaluation of what will and what should happen to the handicapped students in the class once they

leave school. As with the other measurements, a pre and post test was conducted with all 27 participants.

Results

Paper and Pencil Survey

Pretest results. Figure 1 displays the mean percentage of statements to which positive responses were attributed within each of the four attitude factor classes. Responses to social willingness, knowledge and affect statements yielded greater than 80% positive responding in each of the three participant groups. 48-58% of contact statements were responded to positively prior to intervention.

An analysis of paper and pencil responses was conducted examining high schools students who either do volunteer or would like to volunteer in the special education classroom, and those who do not and would not volunteer. Figure 2 indicates twice the social willingness to interact with handicapped peers by volunteers than by nonvolunteers. All results indicate responses made prior to intervention.

Post test results. No significant differences were found on survey measurements between pre and post test within any of the three volunteer experimental groups. As all volunteers expressed positive attitudes on the paper and pencil measurement prior to contact with handicapped peers there was no room for significant improvement in attitude scores following intervention. Some improvement was found on the contact variable post test in each of the three experimental groups, perhaps due to greater visibility of the autistic students schoolwide.

Interview Data

Figure 3 displays data obtained during 20-minute interviews pre and post intervention. The figure delineates the motivations for volunteering in the special education classroom. While pretest results indicate greater frequencies of need for school credits and desire to satisfy curiosity, posttest results yield motivation to continue as a result of liking the students and the experience being fun. This data includes responses made by both peer tutors and special friends. Analysis of peer tutors and special friends as separate groups indicate no consistent differences in motivation to participate pre and post test.

Behavior Probe Data

Figures 4 and 5 show mean duration of interaction in seconds pre and post intervention initiated by special friends, peer tutors, and nonparticipant volunteers (controls). The figures show that among special friends and peer tutors there is an increase in duration of interaction particularly toward a familiar autistic peer following intervention (1-71 secs, .5-32 secs respectively), some increase in duration toward an unfamiliar autistic peer (1.2-9.7 secs, .4-12 secs), and no increase in duration of interaction initiated toward an unfamiliar nonhandicapped peer (2-1.2 secs, 0-0 secs). There is no change in duration of interaction toward three confederates from pre to post intervention among nonparticipant volunteers. While a level difference posttest is seen graphically between special friends plus peer tutors in duration of interaction initiated toward a familiar autistic peer, that difference was not found to be significant. The difference in duration of interaction between

active volunteers and nonparticipant volunteers was, however, found to be significant.

Figure 6 displays the changes in the number of interaction types present during observation periods pre and post intervention. Prior to systematic prompting of contact between handicapped and nonhandicapped peers, volunteers initiated no more than two types of interaction, including an exchange of smiles and social vocalizations. Following intervention, the types of interactions with a familiar autistic peer increased to 8 types of initiated interactions by peer tutors, and to 10 types by special friends. Toward an unfamiliar autistic peer, types of interaction increased from 1 to 2 among peer tutors and 2 to 6 among special friends. There were no increases in the number of interaction types among nonparticipant volunteers pre to post test. Post test interactions initiated by volunteers included smiles, physical affect, gestures, modeling, the use of verbal reinforcement, asking questions, teaching vocalizations, social vocalizations, teaching using materials, and social material manipulation.

Reliability

Reliability procedures were conducted during 20% of the interviews and 22% of the behavior probe sessions. Interviews were tape recorded and independently scored by two trained graduate students. Measurements yielded 99.5% agreement with a range of 96-100%. Two independent observers recorded time sampling data during behavior probes using two stop watches and a central room clock. The observers sat 4m apart both facing the participant and confederate. Both observers were unfamiliar to the participants and displayed themselves busily working on

unrelated project work. Measurements of total duration of interaction during a 5 min probe showed a mean score of 90.4% agreement with a range of 44-100% and a median of 100%. 95.5% agreement was found on types of interaction initiated by the participants with a range of 66-100%. All reliability coefficients were determined by the formula $\frac{A}{A+D} \times 100$ where A = number of agreements and D = number of disagreements.

Discussion

Contact with autistic peers four hours per week for 16 weeks resulted in a significant increase in amount and type of interaction with handicapped peers during noninstructional periods. Motivation to participate was additionally altered following contact so as to include more positive reasons for participation.

While slight differences were found in willingness to interact as indicated by behavioral observations between special friends and peer tutors, the differences were not found to be significant. Consequently, no support was found for the hypothesis that type of contact will influence the attitudes and behavior of nonhandicapped students toward handicapped peers.

Analysis of data regarding interactions toward an unfamiliar nonhandicapped peer indicates that typically high school students will not or will minimally interact with strangers, even same-age strangers. The present investigation found higher frequencies of interaction toward an unfamiliar handicapped peer than toward an unfamiliar nonhandicapped peer. A possible explanation for this

contrasting information is that all observations were done in the special education classroom, an environment where the contingencies for interacting with the handicapped peers were positive and understood. Interacting with the students in the classroom was a part of the daily routine and while observations were conducted during noninstructional periods, the stimuli for interaction were consistently present. Observation in environments separate from the special education classroom need to be done in order to make conclusive statements regarding realistic behavior toward handicapped peers following systematic contact.

All students probed in the first year of this investigation were volunteers. All had some intrinsic motivation for participating; at very least, all had fewer fears of interacting with handicapped persons than nonvolunteers. Those students who volunteered entered the program with generally positive feelings toward their handicapped peers. It's evident that if our goal is to promote attitude change, we need to target students whose attitudes are initially less than positive. Development of programs designed to intervene on relationships between handicapped students and peers who would normally refuse to initiate contact should be our priority concern. Establishment of more tangible incentives to participate other than school credit, or incorporating a required work experience class into the curriculum may be necessary, particularly at the secondary level, if we are to reach the most resistive students.

Overall, both the peer tutor and special friends program were successful, as evidenced by data collected during interview and observation sessions, in promoting further interactions between

peers and encouraging more positive, normalized reasons for continued interaction with peers.

The second year of investigation will serve to increase sample sizes, validate previously recorded data, collect descriptive data of the participants, determine correlations between measurements, determine correlations between attitude and behavior, and adapt observational measurements to nonclassroom settings.

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